

of those amendments and the language of the substitute claims submitted herewith.

The claims now refer to male and female thread diameters (without requiring that the respective diameters must be different from one another in every embodiment of the claimed invention). Amended drawing sheet 2/2, as previously submitted, shows exemplary thread diameters by reference numerals G, I, F and H. These are discussed in the amended version of the paragraph of the specification that begins at page 4, line 12: It is believed that the drawings comply with the PTO Rules.

#### ***Rejections under 35 USC §112, second paragraph***

In the various claim ranges, the order of statement of the base amounts and related variation amounts has been revised in a manner which, it is hoped, will be found satisfactory. Corresponding amendments have been made to the Summary of the Invention.

In applicants's view, these changes may make the claims more rapidly understood by the reader. However, it is respectfully submitted that the scope of the claims has not been affected by these amendments. Moreover, it is believed that persons skilled in the art would have been able to understand the scope of the claims from the original language, although perhaps with greater difficulty, and that the original language was in compliance with the statute. Thus, it is respectfully submitted that these amendments amendments have not been made to establish patentability of the claims, but rather to make them more convenient to read.

#### ***Rejections under 35 USC §103***

In paragraphs 14 and 15, the Office rejects claims 1-11 under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,250,567 to Lewis et al.

The Office has acknowledged that Lewis et al. does not disclose paint or the ranges of flank angle, thread height, root to crest clearance, flank clearance, pitch, core diameter and outer diameter tolerance, pitch tolerance, or nominal diameter recited in the claims. The Office alleges that those parameters are known. However, neither Lewis nor Kubis provides evidence that these parameters, in the several combinations claimed, are known in the context of a trapezoidal spray gun ring

thread. Thus, the references fail to demonstrate the obviousness of the claimed subject matter of any given claim "as a whole", as required by the statute.

In re Aller is relied on for the proposition that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and is therefore obvious. In re Aller, 105 USPQ 233 (CCPA 1955). However, it is respectfully submitted that one skilled in the art, before embarking upon optimization, would have reason to believe that the standard or "unoptimized" prior art thread was less than optimum. Otherwise, why bother? No basis for such a belief is found in the references.

Moreover, it is respectfully submitted that one skilled in the art, before embarking upon optimization, would have in mind a specific optimization goal. Absent such a goal, how would one guide the optimization effort? It is believed the Office will agree that different optimization goals can lead to selection of differing sets of parameters. For example, attempts to optimize a thread from the standpoints of ease of makeup, on the one hand, or leak resistance on the other hand, can lead to the selection of very different "optimization" parameters.

The action (in paragraph 8, last line) suggests what is apparently deemed to be an obvious optimization goal, namely "mating pressure and fit". Pursuit of this general goal does not inherently lead to selection of particular parameters. It is believed the Office will agree that, for example, the alternative goals of easy makeup and leak resistance mentioned in the preceding paragraph could lead to the selection of very different parameters affecting mating pressure and fit.

Thus, neither the Office's stated goal of "mating pressure and fit" nor the references give any guidance on the selection of any optimization goal that clearly leads to the claimed combinations of parameters. Any attempt to buttress the rejection by relying on the inventor's appreciation of problems in the prior art would run afoul of the well-established principle that an inventor's own disclosure may not be used as prior art to support a rejection.

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Accordingly, it is respectfully submitted that the rejection is not supported by clear evidence of obviousness and should be considered and withdrawn. Such action is courteously solicited.

A request for extension of time for one-month is attached with this Response. A check for the required fee of \$55.00 is also attached. Although no additional fees are believed to be due, if any fees are required, please charge them to Deposit Account No. 50-0555. Any credit due applicant may be credited to the same account. An extra copy of this page is supplied for use by the Finance Branch if needed.

Respectfully submitted,

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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### In the Specification:

The paragraph beginning on page 2, line 13 has been amended as follows:

### Summary of the Invention

The spray paint gun of the present invention comprises a gun body having a male thread and an air nozzle ring having female thread, the female thread being adapted to be screwed onto the male thread. The male and female threads are trapezoidal threads having flank angles in the range of 30 degrees +/- 20% [about +/- 20% of 30 degrees]. The male and female [thread] threads have [a] thread diameters [diameter] between about 30 and about 40 mm, and are characterized by thread height of 1.1 mm +/- about 20% [within the range of about +/- 20% of 1.1 mm], root to crest clearance within the range of 0.1 mm +/- about 20% [about +/- 20% of 0.1 mm], and flank clearance within the range of 0.15mm +/- about 20% [about +/- 20% of 0.15 mm]. [In this embodiment] The [the] male and female thread may have a pitch in the range of 2.5mm +/- about 20% [about +/- 20% of 2.5mm]. The core diameter and the outer diameter of the male thread of the gun body may have a tolerance in the range of -0.05mm +/- about 20% [about +/- 20% of -0.05 mm], respectively. The core diameter and the outer diameter of the female thread of the air nozzle ring may have a tolerance in the range of +0.1mm +/- about 20% [about +/- 20% of +0.1 mm], respectively. The pitch may have a tolerance in the range of 0.1mm +/- about 20% [about +/- 20% of 0.1 mm].

**In the Claims:**

Claims 1-11 have been cancelled by this amendment and replaced with corresponding new claims 12-22. In this regard, cancelled claim 1 corresponds to new claim 12, with each subsequent cancelled claim 2-11 corresponding to new claims 13-22 in sequential order.

**PLEASE NOTE: Claims 1-11 have been presented marked-up below merely to facilitate a comparison of the newly presented claims to the cancelled claims. These marked-up claims should not be used when entering the amendment.**

1. A spray paint gun comprising  
a gun body having a male thread, and  
an air nozzle ring having female thread, the female thread being adapted to be screwed onto the male thread,  
wherein the male and female threads are trapezoid threads having[:] a flank angle in the range of [about +/- 20% of 30°] 30° +/- about 20%,  
wherein the male and female [thread] threads have [a] thread [diameter] diameters between about 30 and about 40 mm, and wherein the male and female thread are characterized by:  
thread [height] heights within the range of [about +/- 20% of 1.1 mm] 1.1 mm +/- about 20%,  
root to crest clearance within the range of [about +/- 20% of 0.1 mm,] 0.1 mm +/- about 20%, and  
flank clearance within the range of [about +/- 20% of 0.15 mm] 0.15 mm +/- about 20%.
2. A spray gun according to claim 1, wherein the male and female are further characterized by a pitch in the range of [about +/- 20% of 2.5 mm] 2.5 mm +/- about 20%.
3. A spray gun according to claim 1 , wherein the core diameter and the outer diameter of the male thread of the gun body have a tolerance in the range of 0.05mm +/- about 20% [about +/- 20% of -0.05 mm], respectively.
4. A spray gun according to claim 2, wherein the core diameter and the outer diameter of the male thread of the gun body have a tolerance in the range of 0.05 mm +/- about 20% [about +/- 20% of -0.05 mm], respectively.

5. A spray gun according to claim 1, wherein the core diameter and the outer diameter of the female thread of the air nozzle ring have a tolerance in the range of +0.1 mm +/- about 20% [about +/- 20% of +0.1 mm], respectively.

6. A spray gun according to claim 2, wherein the core diameter and the outer diameter of the female thread of the air nozzle ring have a tolerance in the range of +0.1 mm +/- about 20% [about +/- 20% of +0.1 mm], respectively.

7. A spray gun according to claim 3, wherein the core diameter and the outer diameter of the female thread of the air nozzle ring have a tolerance in the range of +0.1 mm +/- about 20% [about +/- 20% of +0.1 mm], respectively.

8. A spray gun according to claim 4, wherein the core diameter and the outer diameter of the female thread of the air nozzle ring have a tolerance in the range of +0.1 mm +/- about 20% [about +/- 20% of +0.1 mm], respectively.

9. A spray gun according to claim 2, wherein the pitch has a tolerance in the range of 0.1 mm. +/- about 20% [about +/- 20% of +/- 0.1 mm].

10. A spray gun according to claim 1, wherein the male thread has a nominal diameter of about 38 mm.

11. A spray gun according to claim 2, wherein male thread has a nominal diameter of about 38 mm.